Abstract: By embedding as a Physical Layer (PHY) Appliqué patterns   (time, frequency, tone multiplexed, control signal, explicit network authentication, projective, other, or combined) on wireless electronic communications network (WECN) digital signal packets, and using a QRD-based auto-SCORE adaptation algorithm to maximize the signal-to-interference-and-noise ratio (SINR) attainable by multielement arrays over very small time-bandwidth products, differentiation and detection of signals from environmental noise (particularly from other or non-network signals) can be improved, allowing more compressed, secure, efficient network operations. By projecting the signal embedding onto a known linear subspace and using integrated transmit/receive structures, packet detection algorithms, and blind array adaptation algorithms, the WECN processes the data received with constant false-alarm rate, generalized, maximum-likelihood detectors and multilink signal estimation algorithms, based only on knowledge of the embedding pattern used at the transmit node. The resultant system provides PHY information-assured (PHY-IA) data transmission with improved network efficiency and security.